Recent Lake Sturgeon Diet Study Sheds New Light on Genetic Issues

By: Nick Starzl

Staff of the Genoa National Fish Hatchery (NFH) recently completed a 30 day study aimed at determining the genetic implications of feeding prepared diets to larval lake sturgeon. The traditional method of rearing lake sturgeon is by feeding brine shrimp nauplii, frozen bloodworms and krill which typically results in high surviv-

Jorge Buening collecting daily information on the 2009 study at the Genoa NFH aimed at determining the genetic implications of feeding prepared diets to larval lake sturgeon.

About Genoa NFH

Genoa NFH was established over 75 years ago and is one of 69 Federal Fish Hatcheries located across the Nation. Genoa cultures a variety of cold, cool, and warm water fish as well as freshwater mussels and one salamander species. The hatchery is open for tours during business hours. For large groups, please call for an appointment. You can reach the hatchery at 608-689-2605 from 7:30 am to 3:30 pm.

Genoa National Fish Hatchery
75 Years of Fisheries Conservation
1932-2007

ability (>90% from hatch), but has many drawbacks, including high cost, moderate growth, and possible disease vectors. The Genoa NFH propagates up to 60,000 lake sturgeon annually, and would benefit greatly from the ability to feed commercially produced diets (CPDs). Because of this, the Genoa NFH has been experimenting with various CPDs over the last 7 years. Over that period, it has been determined that a ±70% habituation (or diet acceptance) rate onto select CPDs is attainable. However, this reduction in survivability may be of genetic concern if production lots were geared toward this method. Many of the stocking plans for lake sturgeon are developed for restoration purposes, and it is our goal in the U.S. Fish & Wildlife Service to maintain genetic variability as high as possible in these programs. The study was designed to determine if habituation onto Otohime™ feed is genetically or randomly driven by conducting a paired test of the habituation rates of larval lake sturgeon from one pair (1female X 1male) vs. another pair (1female X 1male) as well as maintaining a control for each pair which was fed brine shrimp nauplii. Conducting the same procedure onto two separate 1 to 1 crosses may help answer the question whether or not separate families habituate onto CPDs at varying rates. Although analysis of the study is incomplete, it was determined that there was a significant difference in their habituation rates, as one pair habituated onto the Otohime™ at a rate of 62% compared to the other pair at 77%. Both of the controls showed an expected high survival rate (99%) to the end of the study with normal growth curves. The unequal habituation rates among the two separate pairs may suggest that habituation may cause genetic selection toward families that habituate at a higher rate than others therefore increasing the probability of genetic loss. These results show that if low habituation rate CPDs were to be used, then production methods would have to be in place in order to maintain the genetic composition from as many family pairs as possible. i.e. Keeping family lots separate or marking the fish so that equal numbers can be pooled after the selective agent (CPDs) has passed. In any restoration/recovery program which involves stocking hatchery fish, distributing "wild" fish, or fish that closely represent the founding population, is the best way to conserve the genetic variability and restore fish populations in the natural environment.

Tank of Lake Sturgeon cultured at Genoa NFH

Genoa National Fish Hatchery mission is to recover, restore, maintain and enhance fish and aquatic resources on a basin-wide and national level by producing over 35 aquatic species of varying life stages, participating in active conservation efforts with our partners, and becoming a positive force in the community by educating future generations on the benefits of conservation stewardship

Welcome Pollinators!

By: Jenny Walker Bailey

Genoa National Fish Hatchery is now welcoming all pollinators and people to its new Children's Butterfly Garden. The Children's Butterfly Garden was created by hatchery staff to provide habitat for pollinators and an introduction to some of the quiet wonders of nature for all ages. Construction of the Children's Butterfly Garden was begun on June 22 to kick off National Pollinator Week 2009.

The Children's Butterfly Garden at Genoa National Fish Hatchery

Students were involved in planning, building, and planting the garden, while staff members provided direction, training, and expertise. For Paige Oldham and Brandon Munyon, members of the Youth Conservation Corps (YCC), and Student Temporary Employment Program (STEP) students Sam Stafslien, Katherine Murcko, and Brandon Keesler, building and planting a pollinator garden was an opportunity to learn the values of conservation while developing educational, social, and job skills.

While working in the Butterfly Garden students learned why native plants are important to pollinators for habitat, food, and shelter, and that natural areas where native plants are allowed to grow are in decline. By providing an area where native plants can grow without disturbance, workers are ensuring that pollinators will have a safe haven on the hatchery's grounds. The location of the Butterfly Garden, next to the hatchery's office, is visible from State Highway 35 and is sure to be a safe haven for many weary travelers as well.

Pollinator plants are attractive to people as well as pollinators, and a welcoming patio offers

visitors a peaceful place to view the garden as it grows, see hummingbirds, bees, and observe the butterfly life cycle. In fact, the Children's Butterfly Garden has already seen its first butterfly larvae hatch and grow on butterfly weeds that sprouted from root cuttings. The hatchery's staff hopes that visitors to the garden will discover the beauty and value of nature when encountering these small wonders that so often go unseen or overlooked.

Genoa's first butterfly year class.

While a visit to a butterfly garden may be fun and aesthetically pleasing, pollinator species conservation is serious business. More than 75% of flowering plants and food crops are pollinated by butterflies, birds, bats, bees, and other animals. Pollinators are animals that carry pollen from flower to flower as they collect nectar. When the pollen is spread, flowers become fertilized and fruit will develop. Without pollinators to aid in crop production, many people and animals would suffer. Recent studies have indicated that pollinator species populations are declining world wide. Many of the reasons for the decline are unknown. Some known causes of pollinator population decline are habitat loss, degradation, and pesticide use. Some ways to help pollinator populations are to increase areas for native plant species, minimize pesticide use, educate others about the importance of pollinators, and show others how to help out pollinator populations. Visitors will be provided with information on pollinators and directions for planting a pollinator garden at home. Some of the most important visitors to the butterfly garden will be young children. Genoa National Fish Hatchery is currently visited by over 500 children each year. Many of these children are pre-school age or younger and are too small to enjoy some of the hatchery's wilder places. The Children's Butterfly Garden is a safe place for young children to experience nature and learn basic science concepts.

For those who want to study more advanced science concepts, the Children's Butterfly Garden will be a place to conduct research and ecological studies. Besides being a great educational and habitat opportunity, the Children's Butterfly Garden promises to be a fun place where people can rest, relax, and get their hands dirty. Volunteers may help with planting and upkeep, and Girl and Boy Scouts of America will help with seasonal maintenance such as weeding and mulching. Junior Girl Scout Troop 069 of the Badgerland Council is anticipating their first visit to the Children's Butterfly Garden in October. Let's hope that this is just the beginning of many wonderful children's experiences in Genoa National Fish Hatchery's pollinator garden this year!

Legislative Branch Shoots to the River! Newly Appointed Resource Committee staffer tours Genoa

By Doug Aloisi

Erin Gulick, the natural resource committee staffperson from Representative Ron Kind's office toured the Genoa hatchery and participated in fisheries management activities on the Upper Mississippi River in August. Erin learned first hand about the plight of native mussel populations on the Upper Mississippi River, and was brought to a local mussel bed and shown the diversity of species in localized areas by Region 3 dive team member and mussel biologist Tony Brady. The LaCrosse National Fish and Wildlife Conservation Office also brought down an electrofishing boat to demonstrate fish sampling and collection techniques. Erin had the privilege of landing her first carp on the River during the electrofishing demonstration. She was also shown broodstock collection techniques and the importance of maintaining disease free broodstocks for use in federal fish hatcheries due to emerging diseases that have been located on the River including largemouth bass virus, spring viremia of carp, and VHS. Site visits are a great tool to see first hand the ongoing conservation efforts that are happening on the ground in the district. Congressman Kind's office has been a strong supporter of ongoing conservation efforts in the Upper Mississippi River, and we welcome Erin to the new challenges that await her as she serves on the natural resource committee.

Erin Gulick, the natural resource committee staffperson from Representative Ron Kind's office

A view of Pool 9 of the Mississippi River.

Genoa NFH Lends a Hand and Expertise to Restore Mussels to the Ohio River

By Tony Brady

A mussel community in the Ohio River that was devastated by a toxic chemical discharge will have 191 new residents thanks to the propagation efforts from West Virginia Division of Natural Resources and the Ohio River Island National Wildlife Refuge. Biologists from these agencies began mussel culture in 2008 and the results of their efforts were 191 mussels of three species that will be used to restore the lost mussel community. These mussels were propagated in culture cages that were designed and constructed at Genoa National Fish Hatchery. The partnership between the WV DNR and Genoa NFH began in 2007 when WV DNR biologists Janet Clayton and Scott Morrison visited Genoa NFH and saw the mussel propagation efforts for the federally endangered Higgins eye pearlymussel. To date, the Genoa style cages have produced nearly 50,000 endangered mussels that have been used for recovery in the Upper Mississippi River Basin. With results like these, Clayton and Morrison were excited to attempt mussel culture in West Virginia and in 2008 asked Genoa NFH to build 35 cages and 13 racks that are used to suspend the cages under an existing boat dock. The 191 mussels may not seem like many compared to the estimated 1 million mussel killed, but it is a start. With the addition of 15 more cages in 2009 and one year under their belts and a lot of team work, it won't be long before the mussel numbers produced in West Virginia's cages should begin to approach those seen in the Higgins eye program along the Mississippi River.

The boat dock where mussel culture cages were used to produce mussels for the Ohio River.

Mussels produced in Genoa style cages by West Virginia DNR

Upcoming calendar of events

October 2009

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12 Columbus day	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Rydell NWR walleye harvest

Outdoor Class room curriculum begins

Fall Pond Harvest at Genoa National Fish Hatchery

Fall Fish Stockings